

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:  
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PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing 30 March 2005 (30-03-2005)  
(day/month/year)

Applicant's or agent's file reference  
S1680181

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.

PCT/CA2005/000158

International filing date (day/month/year)

09 February 2005 (09-02-2005)

Priority date (day/month/year)

09 February 2004 (09-02-2004)

International Patent Classification (IPC) or both national classification and IPC

C30B 30/00

Applicant

SIMON FRASER UNIVERSITY ET AL

1. This opinion contains indications relating to the following items :

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Box No. I    | Basis of the opinion  |
| <input checked="" type="checkbox"/> Box No. II   | Priority  |
| <input checked="" type="checkbox"/> Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/> Box No. IV              | Lack of unity of invention  |
| <input checked="" type="checkbox"/> Box No. V    | Reasoned statement under Rule 43bis.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement. |
| <input type="checkbox"/> Box No. VI              | Certain documents cited   |
| <input checked="" type="checkbox"/> Box No. VII  | Certain defects in the international application  |
| <input checked="" type="checkbox"/> Box No. VIII | Certain observations on the international application   |

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/CA  
Canadian Intellectual Property Office  
Place du Portage I, C114 - 1st Floor, Box PCT  
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**Box No. I      Basis of this opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language which it was filed, unless otherwise indicated under this item.  
  
[ ] This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of :
  - a. type of material
    - [ ] a sequence listing
    - [ ] table(s) related to the sequence listing
  - b. format of material
    - [ ] in written format
    - [ ] in computer readable form
  - c. time of filing/furnishing
    - [ ] contained in the international application as filed.
    - [ ] filed together with the international application in computer readable form.
    - [ ] furnished subsequently to this Authority for the purposes of search.
3. [ ] In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statement that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments :

Box No. II      Priority

1. ☒ The following document has not yet been furnished :

☒ copy of the earlier application whose priority has been claimed (Rules 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rules 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary :

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of :

[X] claim Nos. 17

[ ] the said international application, or the said claim Nos. \_\_\_\_\_  
relate to the following subject matter which does not require an international preliminary examination (*specify*) :

[ ] See Supplemental Box for further details.

**Box No. V Reasoned statement under Rule 43bis.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1-16, 18-40 and 42-57	YES
	Claims	41	NO
Inventive step (IS)	Claims	1-16, 18-40 and 42-57	YES
	Claims	41	NO
Industrial applicability (IA)	Claims	1-16 and 18-57	YES
	Claims	NONE	NO

**2. Citations and explanations :**

The closest prior art found to that disclosed in the present application is US5382801. This document discloses a method and an apparatus for producing minute particles whereby the particles are produced by holding charged nucleating particles in an electric field and supplying source particles to the region where the nucleating particles are held. The source particles adhere to the nucleating particles, thus growing minute particles with electric charges. The claims of the present application differ in the sense that the method defined allows for controlled inducing of nucleation, and subsequent crystallization or precipitation of solute(s) dissolved in a solution. There is no need for introduction nucleating particles into the source solute solution since these particles are formed by the method itself.

Claims 1-16, 18-40 and 42-57 meet the criteria of novelty set forth in PCT Article 33(2) because none of the relevant prior art found through this examination process teaches the enhanced nucleation/precipitation/crystallization of solute(s) in a solution by increasing the surface charge density of a vessel containing the solution as defined by independent claims 1, 42 and 46. Claims 1-16 and 18-57 also meet the criteria for inventive step as set forth in PCT Article 33(3) since the subject matter of these claims would not have been obvious to one skilled in the art at the time of the claim dates.

Claim 41 is directed to products prepared by the process of claims 1-40. A product, in this case a precipitate or co-precipitate produced by the method of the present alleged invention, is not rendered novel merely by the fact that it is produced by means of a new process. Many precipitates of inorganic or organic compounds or metal compounds would be known to a skilled practitioner. The precipitates, as defined by claim 41, are not distinguishable from such known compounds. Therefore, the subject matter of independent claim 41 is not novel (Article 33(2) PCT).

Claims 1-16 and 18-57 meet the criteria for industrial applicability set forth in PCT article 33(4) because the claimed subject matter can be used for the nucleation/precipitation/crystallization of numerous organic and inorganic compounds.

**Box No. VII      Certain defects in the international application**

The following defects in the form or contents of the international application have been noted :

Claim 55 should end with a period.

Claim 16 and 35 do not comply with PCT Article 6. The expression "in claim any one of the preceding claims" is ambiguous in meaning and scope. Also, the inclusion of "herein" in claim 16 causes ambiguity.

Claim 29 does not comply with PCT Article 6. The expression "one said" is ambiguous in meaning and scope and should be replaced with "one of said".

Claim 30 does not comply with PCT Article 6. The expression "comprising separating one said first and second solutes" is ambiguous in meaning and scope.

The description does not comply with PCT Article 5. A statement in an application, such as found on page 1, paragraph 1, which refers to an unpublished document, should not be regarded as being part of the description.

**Box No. VIII    Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made :

Claim 17 does not comply with PCT Rule 6.4(a). Aforesaid claim does not make reference to the claim upon which it depends.

Claims 23, 25 and 26 does not comply with PCT Rule 6.4(a). These claims appear to be intended to depend on claim 21, not claim 22 as presently indicated, and therefore do not make proper reference to the claims upon which they depend.

Claim 28 does not comply with PCT Rule 6.4(a). This claim appears to be intended to depend on claim 27, not claim 26 as presently indicated, and therefore does not make proper reference to the claim upon which it depends.